**What is New in HTML5?**

The DOCTYPE declaration for HTML5 is very simple:

<!DOCTYPE html>

The character encoding (charset) declaration is also very simple:

<meta charset="UTF-8">

**HTML5 Example:**

<!DOCTYPE html>  
<html>  
<head>  
<meta charset="UTF-8">  
<title>*Title of the document*</title>  
</head>  
  
<body>  
*Content of the document......*  
</body>  
  
</html>

**\*\*\*Note:** The default character encoding in HTML5 is UTF-8.

**New HTML5 Elements**

The most interesting new elements are:

New **semantic** elements like <header>, <footer>, <article>, and <section>.

New form **control attributes** like number, date, time, calendar, and range.

New **graphic** elements: <svg> and <canvas>.

New **multimedia** elements: <audio> and <video>.

You will learn how to "teach" old browsers to handle HTML5 semantic.

**New HTML5 API's (Application Programming Interfaces)**

The most interesting new API's are:

* HTML Geolocation
* HTML Drag and Drop
* HTML Local Storage
* HTML Application Cache
* HTML Web Workers
* HTML SSE

**\*\*\*Note:** Local storage is a powerful replacement for cookies.

**Elements Removed in HTML5**

The following HTML4 elements have been removed from HTML5:

|  |  |
| --- | --- |
| **Element** | **Use instead** |
| <acronym> | <abbr> |
| <applet> | <object> |
| <basefont> | CSS |
| <big> | CSS |
| <center> | CSS |
| <dir> | <ul> |
| <font> | CSS |
| <frame> |  |
| <frameset> |  |
| <noframes> |  |
| <strike> | CSS |
| <tt> | CSS |

**\*\*\*Note:** You will learn how to easily migrate from HTML4 to HTML5

**HTML & HTML 5 History**

Since the early days of the web, there have been many versions of HTML:

|  |  |
| --- | --- |
| **Version** | **Year** |
| Tim Berners-Lee invented www | 1989 |
| Tim Berners-Lee invented HTML | 1991 |
| Dave Raggett drafted HTML+ | 1993 |
| HTML Working Group defined HTML 2.0 | 1995 |
| W3C Recommended HTML 3.2 | 1997 |
| W3C Recommended HTML 4.01 | 1999 |
| W3C Recommended XHTML 1.0 | 2000 |
| HTML5 WHATWG First Public Draft | 2008 |
| HTML5 WHATWG Living Standard | 2012 |
| HTML5 W3C Final Recommendation | 2014 |

**HTML History**

Tim Berners-Lee invented the "World Wide Web" in 1989, and the Internet took off in the 1990s.

From 1991 to 1998, HTML developed from version 1 to version 4.

In 2000, the World Wide Web Consortium (W3C) recommended XHTML 1.0.

The XHTML syntax was strict, and the developers were forced to write valid and "well-formed" code.

In 2004, WHATWG (Web Hypertext Application Technology Working Group) was formed in response to slow W3C development, and W3C's decision to close down the development of HTML, in favor of XHTML.

WHATWG wanted to develop HTML, consistent with how the web was used, while being backward compatible with older versions of HTML.

In the period 2004-2006, the WHATWG initiative gained support by the major browser vendors.

In 2006, W3C announced that they would support WHATWG.

In 2008, the first HTML5 public draft was released.

In 2012, WHATWG and W3C decided on a separation:

**WHATWG will develop HTML as a "Living Standard"**.

A living standard is never fully complete, but always updated and improved. New features can be added, but old functionality cannot be removed.

The WHATWG Living Standard was published in 2012, and is continuously updated.

**W3C will develop a definitive HTML5 and XHTML5 standard**, as a "snapshot" of WHATWG.

The W3C HTML5 recommendation was released 28 October 2014.

**HTML5 Browser Support**

You can teach older browsers to handle HTML5 correctly.

**HTML5 Browser Support**

HTML5 is supported in all modern browsers. In addition, all browsers, old and new, automatically handle unrecognized elements as inline elements. Because of this, you can "teach" older browsers to handle "unknown" HTML elements.

**\*\*\*Note:** You can even teach IE6 (Windows XP 2001) how to handle unknown HTML elements

**Define HTML5 Elements as Block Elements**

HTML5 defines eight new **semantic** HTML elements. All these are **block-level** elements. To secure correct behavior in older browsers, you can set the CSS **display** property to **block**:

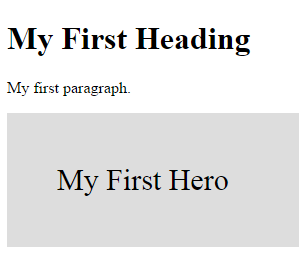
header, section, footer, aside, nav, main, article, figure {  
    display: block;   
}

**Adding New Elements to HTML**

You can also add any new element to HTML with a browser trick. This example adds a new element called **<myHero>** to HTML, and defines a display style for it:

**Lab 1:**

1. **Create the following HTML5 Document**
2. **Save and View**

<!DOCTYPE html>  
<html>  
<head>  
  <title>Creating an HTML Element</title>  
  <script>document.createElement("myHero")</script>  
  <style>  
  myHero {  
      display: block;  
      background-color: #ddd;  
      padding: 50px;  
      font-size: 30px;  
  }   
  </style>   
</head>  
<body>  
  
<h1>My First Heading</h1>  
  
<p>My first paragraph.</p>  
  
<myHero>My First Hero</myHero>  
  
</body>  
</html>

**Questions**

1. **What was the purpose of the script tag?**
2. **The myHero{ …} had what effect on the output?**

The JavaScript statement **document.createElement("myHero")** is added, only to satisfy IE.

**Problem with Internet Explorer**

You could use the solution described above, for all new HTML5 elements, but:

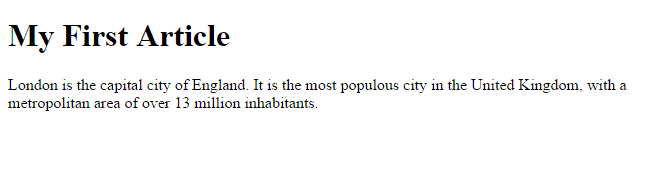
**\*\*\*Note:** Internet Explorer 8 and earlier, does not allow styling of unknown elements.

"**the shiv**":

<!--[if lt IE 9]>  
  <script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"></script>  
<![endif]-->

The code above is a comment, but versions previous to IE9 will read it (and understand it).

**The Complete Shiv Solution**

**Example**

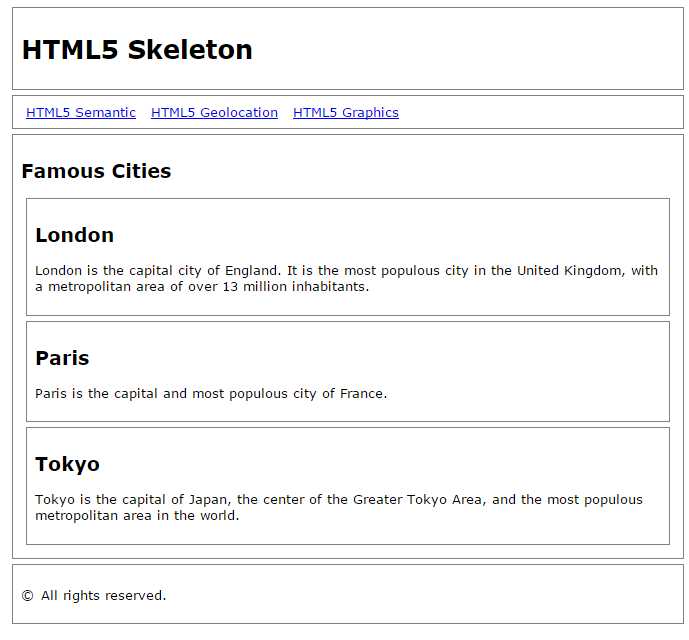
<!DOCTYPE html>  
<html>  
<head>  
  <title>Styling HTML5</title>  
  <!--[if lt IE 9]>  
  <script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"></script>  
  <![endif]-->  
</head>  
<body>  
  
<h1>My First Article</h1>  
  
<article>  
London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.  
</article>  
  
</body>  
</html>

The link to the shiv code must be placed in the <head> element, because Internet Explorer needs to know about all new elements before reading them.

**An HTML5 Skeleton**

**Lab 2**

1. **Create the following HTML5 document**
2. **Save and View**

<!DOCTYPE html>  
<html lang="en">  
<head>  
<title>HTML5 Skeleton</title>  
<meta charset="utf-8">  
  
<!--[if lt IE 9]>  
<script src="http://html5shiv.googlecode.com/svn/trunk/html5.js">  
</script>  
<![endif]-->  
  
<style>  
body {font-family: Verdana, sans-serif; font-size:0.8em;}  
header,nav, section,article,footer  
{border:1px solid grey; margin:5px; padding:8px;}  
nav ul {margin:0; padding:0;}  
nav ul li {display:inline; margin:5px;}  
</style>  
</head>  
<body>  
  
<header>  
  <h1>HTML5 SKeleton</h1>  
</header>  
  
<nav>  
<ul>  
  <li><a href="html5\_semantic\_elements.asp">HTML5 Semantic</a></li>  
  <li><a href="html5\_geolocation.asp">HTML5 Geolocation</a></li>  
  <li><a href="html5\_canvas.asp">HTML5 Graphics</a></li>  
</ul>  
</nav>  
  
<section>  
  
<h1>Famous Cities</h1>  
  
<article>  
<h2>London</h2>  
<p>London is the capital city of England. It is the most populous city in the United Kingdom,  
with a metropolitan area of over 13 million inhabitants.</p>  
</article>  
  
<article>  
<h2>Paris</h2>  
<p>Paris is the capital and most populous city of France.</p>  
</article>  
  
<article>  
<h2>Tokyo</h2>  
<p>Tokyo is the capital of Japan, the center of the Greater Tokyo Area,  
and the most populous metropolitan area in the world.</p>  
</article>  
</section>  
<footer>  
<p>&copy; All rights reserved.</p>  
</footer>  
  
</body>  
</htm**l**>

**Questions:**

1. **What was the purpose of the article tag?**
2. **What was the purpose of the nav tag?**